

### REMARKS

Claims 1-71 are pending in the above-identified application. The Examiner has required restriction of the pending claims under 35 U.S.C. § 121 to one of the following three groups:

Group I: Claims 1-61 and 71;

Group II: Claims 62-64; and

Group III: Claims 65-70.

The Examiner contends that the inventions of Groups I-III are distinct, each from the other, because they require different steps to achieve their intended goals.

The Examiner has further required a first species election regardless of which Group of claims is elected:

Species A-1) Methods, computer program products, and computer systems wherein no weighting of variation versus distance from a locus is required.

Species A-2) Methods, computer program products, and computer systems wherein a weighting is required of variations versus distance from a locus.

The Examiner has further required a second species election regardless of which Group of claims is elected:

A type of algorithm that is used to form the correlation value between the claimed phenotypic data structures and genotypic data structures from the species disclosed in claims 17, 23, 47, or 48.

In order to be fully responsive, Applicants hereby elect, with traverse, to prosecute the invention of Group I (claims 1-61 and 71). In the first species election, Applicants elect species A-1 (methods, computer program products, and computer systems wherein no weighting of variation versus distance from a locus is required). Claims 1-13, 16-38, 41-61, and 71 are readable upon species A-1. In the second species election, Applicants elect, as a correlation algorithm, linear regression correlation as disclosed in claim 17 (and described on page 23, line 20, through page 24, line 2, of the specification). Claims 1-61 and 71 are

readable upon the second species election. In the May 12, 2003 Office Action, the Examiner stated that claims 1- 71 are generic to Group I.

Applicants reserve the right to petition from the Restriction Requirement under 37 C.F.R. § 1.144 and respectfully traverse the Examiner's division of the invention into species A-1 and A-2. Applicants contend that it would not be a serious burden on the Examiner to examine species A-1 and A-2 together. Moreover, Applicants contend that it would not be a serious burden to search, together, the various types of algorithms that can be used to form the correlation values between the claimed phenotypic and genotypic data structures. In this regard, M.P.E.P. § 803 (Original Eighth Edition, February 2003 revision) states:

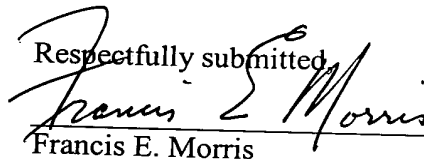
If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to distinct or independent inventions.

Accordingly, Applicants respectfully request, therefore, that the Examiner withdraw the first and second species election.

Applicants request that the above-mentioned remarks be entered and made of record in the file history of the subject application. It is estimated that no fee is required for submission of this response, beyond the extension fee. Should it be found that an additional fee is required, please charge the required fee to Pennie & Edmonds LLP Deposit Account No. 16-1150.

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Respectfully submitted,

  
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Enclosure